
A New Species of the Fern Genus *Thelypteris* (Thelypteridaceae) from Southeastern Brazil

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ABSTRACT. *Thelypteris semirii*, known only from Minas Gerais, Brazil, is described and illustrated. The new species belongs to *Thelypteris* subg. *Goniopteris*, due to the indument of furcate and stellate trichomes on scales, petioles, rachises, and costae. It is most closely related to *T. scabra* (C. Presl) Lellinger (from Argentina, Paraguay, and southeastern Brazil) because of pinna shape, disposition of indument, prominent sinuses, and unbranched trichomes on sporangial stalks. It differs by having trichomes golden or orange, stipitate, and glandular, on both surfaces of all pinnae and indusia. Stems are erect and buds are lacking in the axils of distal pinnae.

Besides an early monograph by Christensen (1913) and the surveys of Brade (1972) and Sehnem (1979), nothing more on the taxonomy of the Brazilian species of the *Thelypteris* subg. *Goniopteris* (C. Presl) Duek has been published. This subgenus comprises 80 to 100 Neotropical species from Florida, the Antilles, and southern Mexico to northern Argentina and Paraguay (Smith, 1992). *Thelypteris* subg. *Goniopteris* is distinguished from other subgenera of *Thelypteris* by the presence of furcate or stellate trichomes on various plant parts, especially on the scales at the stem apex and in the adaxial groove of the rachis (Smith, 1983). Such trichomes are apparently lacking in a few species of subgenus *Goniopteris* (Smith, 1983, 1992), but are always present in Brazilian species. The major center of diversity for subgenus *Goniopteris* is Central America, where 41 species occur. Secondary centers are southeastern Brazil, Peru, and Ecuador. Brazil has approximately 29 species of subgenus *Goniopteris*, 21 of them occurring in the southeastern part of this country with at least 13 endemic to this region. In southeastern Brazil subgenus *Goniopteris* grows in mesic and moist shaded habitats, such as primary and secondary lowland and montane rainforests, from 0 to 1000 m, rarely reaching

1600 m. An exception is *Thelypteris lugubris* (Kunze ex Mettenius) R. Tryon & A. Tryon, which sometimes grows in open woods, along paths and weedy sites such as the understory of banana plantations. The present work provides the description of a new species and a key to the species of *Thelypteris* subg. *Goniopteris* of southeastern Brazil most closely related to this new species.

Thelypteris semirii Salino & Melo, sp. nov.

TYPE: Brazil. Minas Gerais: Marliéria, Parque Estadual do Rio Doce, Campolina, Dec. 1996, Salino 2848 (holotype, BHCB; isotypes, UC, UEC). Figure 1A–E.

Species nova subgeneris *Goniopteridis*, *Thelypteridi scabra* (C. Presl) Lellinger affinis, a qua pinnis trichomatibus glandulosis stipitatis abaxialiter vestitis et caule longo erecto differt.

Stems erect, with caudex to 15 cm long, scales lanceolate, brownish, with furcate and stellate trichomes, sometimes also with marginal glandular trichomes. Leaves clustered, 64–103 cm long, monomorphic. Petioles yellowish, sulcate on adaxial side, 30–55 × 0.2–0.3 cm, glabrescent to sparsely pilose, with furcate and stellate trichomes up to 1.5 mm long, also with lanceolate scales. Laminae 34–59 cm long, herbaceous to chartaceous, not verrucose, 1-pinnate to pinnatifid, apex gradually reduced, confluent and pinnatifid. Buds and aerophores absent. Rachises densely pilose in adaxial grooves, abaxially sparsely pilose with furcate and stellate trichomes, sometimes also with unbranched trichomes, abaxially sometimes stellate and furcate trichomes absent. Pinnae 11 to 20 pairs per leaf, sessile, 9–12 × 1.3–2 cm, linear-lanceolate, elliptic or lanceolate, with apex acuminate and base truncate or oblique; incised ca. ½ their width, with lowermost pinnae strongly deflexed, hair-like scales on abaxial side of costae. Segments 3–6 mm wide, falcate, with margins entire and apex round-

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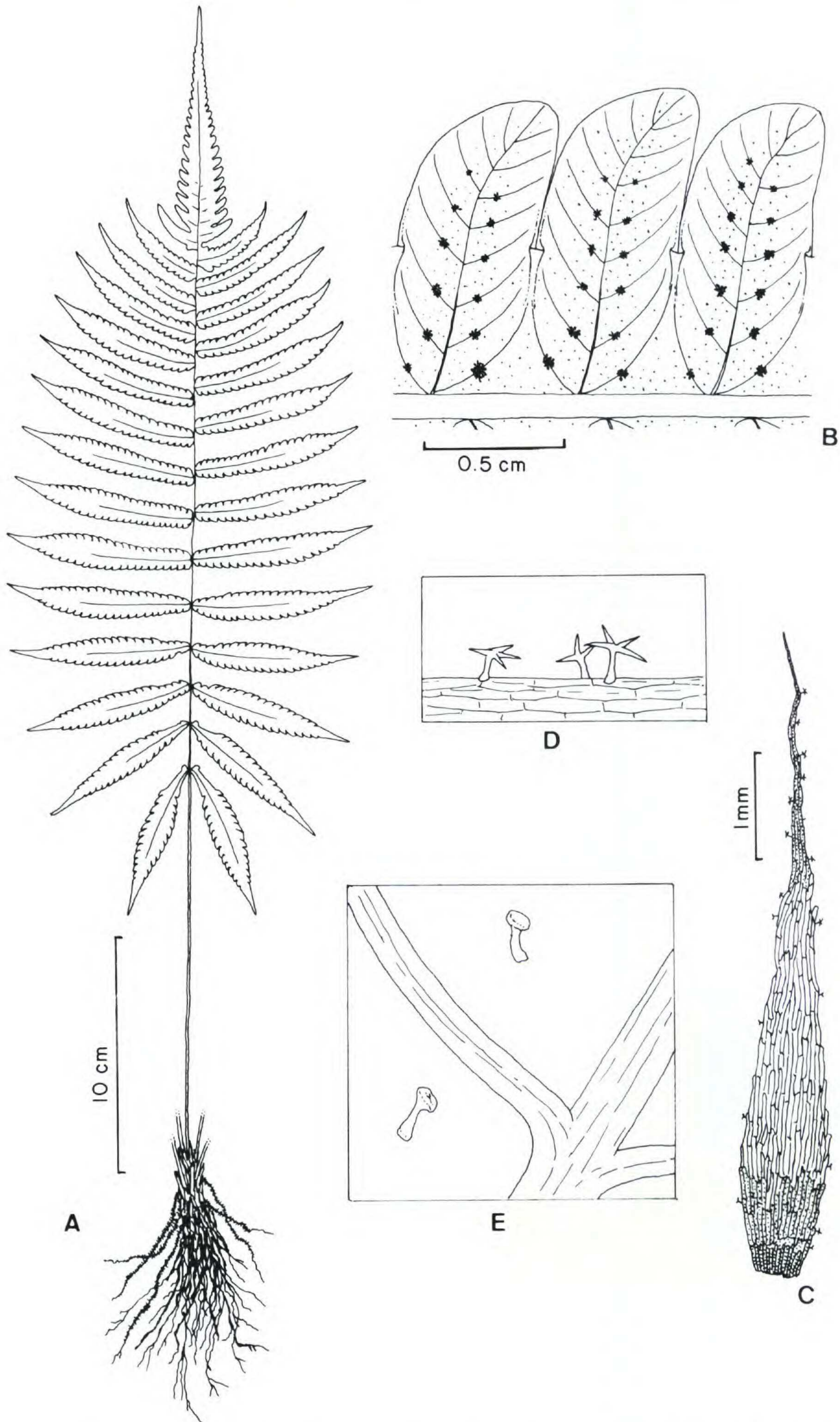


Figure 1. A–E. *Thelypteris semirii* Salino & Melo (*Salino 2848*, holotype). —A. Habit. —B. Segments, showing venation, soral position, and prominent sinuses. —C. Stem scale. —D. Detail of epidermis surface of petiole, showing stellate trichomes. —E. Detail of stalked glandular trichomes on abaxial side of laminar tissue.

ed, obtuse or acute, veins 6 to 11 pairs per segment, unbranched, lowermost vein pairs from adjacent segments running to or just above the sinus. Indument of furcate and stellate trichomes on scales, petioles, rachises, and costae; unbranched trichomes on petioles, rachises, costae, costules, and margins of segments, sometimes on veins and laminar tissue; golden or orangish, glandular, stalked trichomes on both surfaces of pinnae and indusia. Sori in medial to inframedial positions, indusia reniform, with margin repand, pale to brown, and glandular; sporangia glabrous, sometimes with unbranched trichomes on sporangial stalks.

Epithet. This plant is named in honor of João Semir (State University of Campinas, Brazil), who has greatly contributed to our knowledge of the Brazilian flora.

Distribution and habitat. *Thelypteris semirii* is endemic to the "Zona da Mata" region in the State of Minas Gerais, Brazil, and grows in shaded areas in the primary and secondary Atlantic Rain Forest, from 300 to 700 m. This new species is common only in the Rio Doce State Park, between 19°41'–19°30'S and 42°38'5"–48°28'W and is rare outside this region.

The new species belongs to *Thelypteris* subg. *Goniopteris*, due to the indument of trichomes furcate and stellate on scales, petioles, rachises, and costa. It is very similar to *T. scabra* (from Argentina, Paraguay, and southeastern Brazil) in pinna shape, indument disposition, prominent sinuses, and unbranched trichomes on sporangial stalks. However, *T. scabra* has creeping stems, buds in the axils of distal pinnae and lacks orangish, stalked, glandular trichomes on the abaxial side of costae, veins, laminar tissue, and indusia. *Thelypteris semirii* has an erect stem, lacks buds in the axils of distal pinnae, and has trichomes that are glandular, short-stalked, and orangish on abaxial sides of costae, veins, laminar tissue, and indusia. This new species differs from the other species of subgenus *Goniopteris* from Brazil by the presence of glandular trichomes. Other species of subgenus *Goniopteris* from Brazil are eglandular. However, *T. aureola* A. R. Smith (from Honduras) has numerous golden or orangish, short-stalked, glandular trichomes on the abaxial surfaces of rachises, costae, veins, and laminar tissue (Smith, 1990). *Thelypteris aureola* has exindusiate sori, and sporangia and receptacle glandular, while *T. semirii* has indusiate sori, and sporangia and receptacle without glandular trichomes.

Paratypes. BRAZIL. **Minas Gerais:** Astoldo Dutra-Guarani, às margens do Rio Pomba, 7 Apr. 1998, *Salino 4176* (BHCB); Marliéria, Parque Estadual do Rio Doce,

Trilha do Vinhático, 16 May 1995, *Salino 2167* (BHCB, UC), 29 Mar. 1996, *Salino 2663* (BHCB), Campolina, 30 Mar. 1996, *Salino 2673* (BHCB), Ilha do Clei—porção norte, 22 June 1996, *Scudeller 456* (BHCB); Rio Casca, margens do Rio Casca, 28 Feb. 1998, *Salino 4079* (BHCB); Viçosa, Agricultural College lands, road to São Miguel, 19 Mar. 1930, *Mexia 4487-b* (GH, UC, US).

KEY TO THE SPECIES OF *THELYPTERIS* SUBG. *GONIOPTERIS* OF SOUTHEASTERN BRAZIL ALLIED TO *T. SEMIRII*

- 1a. Stem erect; trichomes orange, short-stalked, glandular on the abaxial costa, veins, laminar tissue, and indusia . . . *T. semirii* (Brazil, Minas Gerais)
- 1b. Stem creeping; glandular trichomes absent.
 - 2a. Sori exindusiate.
 - 3a. Lamina with apex abruptly reduced, similar to lateral pinnae (conform); sporangial capsules with simple trichomes . . . *T. tetragona* (Swartz) Small (from eastern and southern Mexico to Panama; Florida; the Antilles; Colombia to Peru and Surinam (Smith, 1992); Argentina (Ponce, 1987); north and southeastern Brazil (Salino, pers. obs.)
 - 3b. Lamina with apex gradually reduced, confluent and pinnatifid; sporangial capsules without trichomes.
 - 4a. Buds on axils of lowermost pinnae; base of medial pinnae, with acroscopic side not auriculate . . . *T. abbiattii* C. F. Reed (from southeastern Brazil and Argentina)
 - 4b. Buds absent on axils of lowermost pinnae; base of medial pinnae, with acroscopic side auriculate, the auricle often overlapping the rachis *T. riograndensis* (Lindman) C. F. Reed (from southeastern Brazil, Argentina, Paraguay, and Uruguay)
 - 2b. Sori indusiate.
 - 5a. Scales lanceolate on abaxial costa; adaxial laminar tissue pubescent; trichomes simple and furcate on abaxial veins . . . *T. lugubris* (Kunze ex Mettenius) R. M. Tryon & A. F. Tryon (from southeastern and central Brazil)
 - 5b. Scales absent on abaxial costa; adaxial laminar tissue glabrous; trichomes absent on abaxial veins *T. scabra* (from southeastern Brazil, Argentina, and Paraguay)

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